line 5. In one embodiment, upon an event, the invention reports the occurrence of a failure to a system administrator or remote user. *See* App., p. 10, line 20. The continuous condition monitoring by the independently functional system recorder enables a system administrator or remotely located client to analyze the failure and take corrective actions. *See* App., p.10, lines 25-27. The system log also is independent of a primary central processor unit (CPU) in the server system. *See* App., p. 8, line 8.

SyMON describes the operation of a software application designed for Ultra™ Enterprise™ 3000, 4000, 5000, and 6000 series server systems. SyMON uses a file called a log file on a hard disk drive to store system conditions. SyMON identifies hardware and software conditions such as a CPU crash or low swap space (a condition impeding server system performance). The software also monitors hardware performance to detect incipient hardware failure, analyzes system performance in real time and, if desired, alerts an operator when a SyMON detectable event occurs. *See* SyMON, p. 1-1. SyMON further maintains a log file of detected conditions for future analysis. *See* SyMON, p. 1-2. However, Applicant submits that SyMON does not teach the use of a system recorder as defined by Applicant. Further, Applicant's claimed invention contains a hardware component, e.g. an NVRAM, associated with the system recorder.

SyMON performs the above mentioned functions using a two layered approach including a data capture layer (dcl) and a management application program (map). The dcl software, as the first layer, monitors the server systems while running in the background of the server's operating system using three data gathering agents including a system configuration reader, the operating system monitor and a log file scanner. *See* SyMON, p. 1-2. The configuration reader reports on the system hardware configuration data such as CPU and I/O boards and monitors and tracks any changes to the configuration as well as the state of its components. *See* SyMON, p. 1-2. The operating system agent monitors the operating system and reports on CPU usage, disk and network I/O, memory and swap space usage, and swapping rates. *See* SyMON, p. 1-2. The log scanner monitors system log files and searches a user-specified list of expressions stored in a rules files and generates "conditions" for display on a graphic display. *See* SyMON, p. 1-3. The rules file is a database storing condition messages corresponding to monitored events.

SyMON's map, as the second layer, is comprised of a display and an event handler. As previously discussed, the display receives and displays data from the dcl agents. The event

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handler monitors changes in the dcl data stream and generates an event message, when appropriate, and notes the event in the log file. *See* SyMON, p. 1-3.

Thus, SyMON is a continuous, self-diagnostic application. However, SyMON's functionality is contingent on the continued operation of the server system. The dcl software depends on the system's CPU to monitor the configuration reader's reports on the system hardware. Further, the system's CPU analyzes the operating system monitor's reports for its own status and the state of other components. In the event of a CPU failure, the configuration reader and the operating system monitor would cease functioning and the log scanner would no longer receive data. Thus, while SyMON "identifies hardware and software conditions quickly," it can only do so while the system is functioning. Consequently, SyMON cannot record system events independently of the host server.

In rejecting Claims 1 and 2, the Examiner stated that SyMON discloses a system for reporting a failure in a computer system. However, Applicant submits that SyMON does not teach how to transmit failure information to a system recorder as defined by Applicant or how to store the failure information in a system log independent of the operational state of the server system. In contrast, Applicant's inventive system includes a method of recording and storing failure data that is independent of the monitored server system. Applicant's invention uses dedicated and independent microcontrollers as the system recorder to monitor a system data stream on a system bus. A NVRAM storage device is used to store failure messages in a system log. Both are independent of the server's CPU and power. *See* App. p. 3, lines 6-9. Thus, in the event of a server system CPU or power failure, the independently functional system recorder can continue to operate. An operator can, therefore, continuously monitor and access the system for diagnostic and corrective purposes. The system log would also continue to receive and store any subsequent messages.

Therefore, for the reasons stated above, Applicant respectfully submits that the rejections of Claims 1, 24, 30, and 41 are overcome and the claims should be allowed.

Discussion of Claims Rejected Under 35 U.S.C. § 103(a)

Claim 35 was rejected under 35 U.S.C. § 103(a) as being unpatentable over SyMON in view of U.S. Patent No. 5,432,715 to Shigematsu, et al.

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In rejecting Claim 35, the Examiner states that Shigematsu discloses a system for reporting a failure in a computer system which includes a self-monitoring unit responsible for monitoring the status of a system, generating a message and sending it to the message transmitting unit. The Examiner also states that a bit setting is a likely way to represent a device's status in such a transmission and it would have been obvious to include such a technique as an interface between the monitoring unit and the monitoring CPU. However, Shigematsu does not refer to the bit setting technique in the message as a means to indicate the type of failure. Further, SYMON, though it can report error events to a remote computer within the network, does not teach or suggest a method of continuous recording in the event of a system failure.

With respect to Claim 35, Applicant's claimed invention includes reporting a system failure in a server system by detecting a system failure condition, transmitting failure information related to the failure condition to a system recorder, storing the failure information in a system log, and reporting an occurrence of an event to a remote computer. Applicant asserts that the method is non-obvious.

Respectfully, the Examiner's position overlooks the fact that Applicant's embodiment of the monitoring processor, a microcontroller, is the system recorder and not the server CPU, as implied by the Examiner. *See* App. Fig. 8a. Thus, it would not have been obvious to include an interface to an independently functional system recorder using a system bus.

Further, Shigematsu describes a network of decentralized and stand-alone computers. Each computer in the system contains a "self-monitoring unit," an "important message transmitting unit," and a "self-monitored all-message unit." *See* Shigematsu, col. 5, lines 13-17. The "self-monitoring unit" monitors the associated computer and transmits monitored messages to the transmitting units for distribution. The "important message transmitting unit" only transmits important messages to the system such as operating system and hardware trouble that may cause failure of the entire network or a portion thereof. The "self-monitored all message unit" transmits all self-monitored messages including important messages. The designated monitoring computer contains additional components to monitor the transmissions, ascertain the importance level, and to display the messages generated by the transmissions. *See* Shigematsu, col. 5, lines 33-42.

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When a computer in the network experiences an event, the level of the corresponding message is determined and then routed to a monitoring computer for proper display. The event notification system is dependant on the operational state of the transmitting computer. Thus a condition such as a power loss would disable the ability to transmit a failure notice. This is contrasted to the separate computational capability provided by the recited system recorder. Since the system described by Shigematsu does not include a system recorder, no record of the failure condition can be saved. Thus, Applicant respectfully submits that the limitation of a system recorder independent of the central processor in the monitored server system is not taught by the cited reference.

Summary

Applicant has endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. In light of the above amendments and remarks, reconsideration and withdrawal of the outstanding rejections is respectfully requested. If the Examiner has any questions which may be answered by telephone, he is respectfully invited to call the undersigned directly.

Respectfully submitted,

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Dated: 9/21/99

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